

REMARKS

In the Official Action, the Examiner rejected claims 1-3 and 5 as being anticipated by or obvious over JP 2003-183453 and further rejected claim 4 under 35 U.S.C. §103 as being obvious over the combination of JP '453 publication and WO 01/90262. The Examiner also raised a rejection under the second paragraph of 35 U.S.C. §112 for the reasons provided on page 7 of the Action.

In response to the rejections raised in the Official Action, claims 2-5 have been amended to recite certain aspects of the invention with greater precision in response to the §112 rejection. In particular, claim 2 has been amended to make it clear that the polyethylene-based wax refers to the wax first recited in claim 1, as is apparent from the specification and particularly the Examples starting on page 38. In addition, claims 3-5 have been amended to clarify the weight bases consistent with the description provided at least on page 5, lines 2-6 and the passage extending from page 37, line 23 to page 38, line 3. Accordingly, the §112 rejection is believed to be fully met.

Before addressing the rejections on prior art grounds, applicants believe that a discussion of the various aspects of the present invention and the advantages which may be obtained therefrom is in order. More particularly, claim 1 recites an additive for a printing ink comprising a polyethylene-based wax having certain defined characteristics (i) to (vii). These characteristics are particularly set forth as follows:

(i) an ethylene homopolymer or a copolymer of ethylene and at least one α -olefin selected from α -olefins having 3 to 20 carbon atoms,

- (ii) an intrinsic viscosity $[\eta]$ determined in decalin at 135°C ranging from 0.06 to 0.35 dl/g,
- (iii) a ratio (M_w/M_n) of weight average molecular weight (M_w) to number average molecular weight (M_n) determined by gel permeation chromatography (GPC) ranging from 1.7 to 3.2,
- (iv) a ratio (M_z/M_w) of z-average molecular weight (M_z) to weight average molecular weight (M_w) determined by gel permeation chromatography (GPC) ranging from 1.5 to 2.0,
- (v) a density ranging from 920 to 980 kg/m³,
- (vi) a penetration hardness of 5 dmm or less, and
- (vii) an acid value ranging from 0.3 to 9.9 KOH-mg/g.

Claim 2 defines the polyethylene-based wax with the great particularity, claims 3 and 4 recite a solvent dispersion for a printing ink and claim 5 recites a printing ink in which the polyethylene-based wax is contained in the form of fine particles with the amount of aromatic solvent being restricted to less than 5 wt. %.

The significance of the defined characteristics is demonstrated in the illustrative Examples starting on page 38 of the specification. In particular, as shown in the Tables provided on pages 54 and 55, illustrative Samples 1-E and 2-E meet each of the defined characteristics and exhibit good storage stability, abrasion resistance, and blocking resistance. The Comparative Examples can be contrasted with the illustrative Examples. In particular, Comparative Example HW210MP includes all of the characteristics except the M_z/M_w ratio of 1.5 to 2.0 and exhibits inferior abrasion resistance and blocking resistance. Comparative Example

HW410P also does not have the defined Mz/Mw or the claimed acid value and exhibits inferior storage stability.

The Comparative Examples provided in the specification not only demonstrate the importance of the claimed characteristics, but they also show that even though a polyethylene may have a Mw/Mn ratio within the claimed range does not inherently lead to the claimed Mz/Mw ratio or the claimed acid value.

With the foregoing discussion, claims of record and the technical evidence in mind, applicants respectfully submit that the claims of record are patentable over the cited prior art. The JP '453 publication discloses an additive for a printing ink comprising a polyethylene wax that is a homopolymer or copolymer of ethylene with an α -olefin having 3 or more carbon atoms with an intrinsic viscosity of 0.11-0.17 dl/g, a Mw/Mn of 2.9 or less, a density of 850-980 kg/m³ and an acid value of 30-100 KOH-mg/g.

As acknowledged by the Examiner in the paragraph bridging pages 3 and 4 of the Action, the JP '453 publication does not disclose or teach the claimed Mz/Mw ratio of from 1.5 to 2.0. However, contrary to the assertion by the Examiner, the claimed Mz/Mw ratio is not inherent as is evident by the aforementioned illustrative and Comparative Examples provided in the specification. As the Examiner is well aware, in order for proper reliance to be placed on the principle of "inherency", the alleged inherent feature must be a necessary result and not merely a possible one, *see, In re Robertson*, 49 USPQ2d 1949 (Fed. Cir. 1999).

The claimed Mz/Mw ratio is also not obvious from the teachings of the JP '453 publication since there is no recognition that this ratio is important in obtaining the advantageous results which can be obtained in accordance with the present

invention. In this respect, the Examiner cannot assert that it would be obvious to optimize the Mz/Mw ratio in a situation such as this where the prior art does not recognize that this particular parameter affects the result, *see In re Antonie*, 195 USPQ 6 (CCPA 1977).

The Examiner has also recognized that the JP '453 publication does not disclose the claimed acid value ranging from 0.3 to 9.9 KOH-Mg/g. Instead, the Examiner has referred to "KSR rationales". Initially, applicants respectfully note that the decision in *KSR International Co. v. Teleflex Inc.*, 127 S.Ct. 1727 (2007) relates to issues of "obviousness" under 35 U.S.C. §103(a) and therefore is inconsistent with the anticipation rejection set forth on page 2 of the Action. Furthermore, the *KSR* decision does not stand for the proposition that one can ignore specific teachings in the prior art which would lead away from the present invention. Here, where the lower value of the disclosed range of JP '453 publication is a multiple of the upper recited value of claim 1, the Examiner cannot ignore this feature and claim that the difference is "obvious". Furthermore, it would be contrary to the teachings of the JP '453 publication to use a technique to lower the acid value outside the range specifically defined in the publication. Accordingly, the JP '453 publication cannot be used in any way to anticipate or render obvious any of the claims of record.

The WO '262 publication has been relied on by the Examiner for the teaching of a non-aromatic solvent containing an alcohol-based solvent and/or an ester-based solvent at a ratio of 10 wt. % or more based on the total weight of the non-aromatic solvent. Although applicants do not concede the propriety of the proposed combination of the WO '262 publication with the JP '453 publication, even if a proper basis for the combination exists, it still would not remedy the deficiencies discussed

above and would certainly not lead those of ordinary skill in the art to the invention as defined in the claims of record or a recognition of the advantages which can be obtained therefrom.

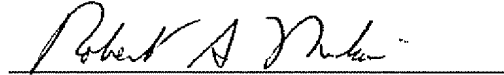
For all of the reasons set forth above, applicants respectfully submit that the claims now of record fully comply with the provisions of 35 U.S.C. §112 and are patentable over the cited prior art. Accordingly, reconsideration and allowance of the present application are respectfully requested.

Should the Examiner wish to discuss any aspect of the present application, he is invited to contact the undersigned attorney at the number provided below.

Respectfully submitted,

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